

Report of the first
Food Security Outlook Forum
for the Greater Horn of Africa

held in conjunction with the
14th Greater Horn of Africa Climate Outlook Forum (GHACOF 14)
August 25-26, 2004
Nairobi, Kenya



Preface

This report documents the findings of the first Food Security Outlook Forum (FSOF) for the Greater Horn of Africa (GHA). The forum brought together experts in climatology, food security, and climate-sensitive sectors affecting food security. The experts examined the current food security situation within the region, the climate outlook for September through December 2004, and likely climate effects on crops, livestock, diseases, and pests over the season. The effects of the projected behavior of these variables -- based on the climate outlook -- were interpreted as food security impacts for the various livelihood zones within the region. This allowed the forum participants to make informed judgments about the potential trajectory of currently food insecure hotspots through the coming season.

Results derive from a combination of quantitative models and expert judgment. As this was the first time such an exercise has been undertaken, the results should be considered experimental. Many factors affecting food security that are unaffected by climate -- or whose relationship to climate is not well understood -- are not incorporated in the outlook and could offset or amplify the impacts of climatic influences. Many market influences are not accounted for, for example. The food security outlook is based on the climate outlook; the behavior of factors affecting food security that are only partially affected or unaffected by climate is assumed to be governed by long-term historical probabilities. It is also the case that not all countries in the GHA have mapped all of their livelihood zones, and there is still inconsistency in the information collected and the interpretation of this information for food security assessments.

While seasonal climate forecasts have been shown to have high skill for the September-December season for the GHA, there is currently no means of verifying the skill of the Food Security Outlook (FSO). All forecasts contain a degree of uncertainty. The current state of the art is such that the uncertainty associated with the FSO cannot be quantified.

Nevertheless the organizers and participants in the workshop believe that FSOF has been a valuable exercise that sets the stage for further efforts to improve food security analysis and its linkages to contingency planning and food security risk management in the region. The forum did not start from scratch, but rather builds on a considerable base of data and methods, expertise and experience in both climate forecasting and food security assessment within the region. Areas identified as current and projected food insecurity hotspots should be closely monitored and updates obtained from national and international authorities.

The FSOF is a first attempt to systematically incorporate climate forecast information into a regional food security analysis. The current report should therefore be as only a first step, with recommendations for improvements in the future. With experience and improvements in data and methods, as confidence in the FSOs grows, the intent is that they can be used to anticipate and avert food-related crises, identifying specific, climate-related risk factors. This information can be used by assistance agencies and ultimately perhaps by affected people to manage food security risks, as opposed to managing food security emergencies. Accomplishing this objective will require strengthening linkages

between food security analyses and responses, incorporating such measures as response triggers and contingency response funds.

It is hoped that earlier interventions to support livelihoods and stabilize consumption in the face of climate variability will prevent households from having to exercise coping options that are destructive to their long-term economic potential, such as liquidating productive assets to meet short term food needs. Averting repeated cycles of destitution would create the possibility for households to be able to accumulate adequate resources with which to better manage risks in pursuit of sustainable development.

If successful, a virtuous cycle of more successful risk management by households -- leading to sustained economic development -- could arise, diminishing the need for costly and prolonged emergency assistance programs and freeing additional development resources to allocate into more productive investments. In the Greater Horn of Africa, where climate is highly variable and livelihoods are often vulnerable to climatic hazards, managing climate-related risks is critical to breaking the current cycle of relief to development to relief again and allowing more households to emerge from poverty.

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Introduction

In recognition that climate variability can have major food security impacts in the Greater Horn of Africa (GHA) region, in February 2004 at the Greater Horn of Africa Climate Outlook Forum 13 (GHACOF13), a series of consultations were held among food security and climate experts, concerning how climate affects food security and how climate forecasts could be used in generating food security scenarios. These experts agreed that efforts should be made to develop methods for systematically incorporating seasonal climate forecasts into food security analyses by examining the differential impacts of climate on livelihood systems throughout the region. This could potentially increase the lead-time available for contingency planning and food security risk management.

Efforts to establish a Food Security Outlook Forum (FSOF) were led by the Intergovernmental Authority on Development (IGAD) Climate Applications Center (ICPAC), the World Food Program (WFP), the International Research Institute for Climate Prediction (IRI), the United States Geological Survey (USGS), and the Famine Early Warning Systems Network (FEWS NET). A local organizing committee was formed, chaired on behalf of IGAD by ICPAC. An international organizing committee was chaired by WFP and IRI. The objective of the FSOF was to develop a regional, consensus-based, food security outlook, in what was the first collaborative effort to use GHA consensus climate outlook for forecasting food security outlooks, regionally and nationally.

The partner organizations needed to design, produce and interpret a regional Food Security Outlook include food security assessment and response specialists, contingency planners, food assistance organizations, meteorological services, and specialists in climate impacts in food and livelihood security-related sectors. The organizing committee sent invitations to a wide range of national and regional experts. A list of participants in the FSOF is attached in Appendix I. It was acknowledged that time and budget constraints limited the participants. The organizing committees also recognized that this first collaborative effort, bringing together multiple sectors and countries, would be an experimental exercise, with much learning on the part of all participants. Methodologies, data sources, and institutional participation in food security assessment and outlook preparation vary from country to country.

FSOF Methodology

The GHA Food Security Outlook Forum (FSOF) was held in Nairobi, Kenya, in conjunction with the 14th annual GHA Climate Outlook Forum (GHACOF14). In his introductory remarks, L. Ogallo (Director of ICPAC) noted that this first FSOF would be an experimental process, the goal of which was to assess, share, and refine methods for using the GHA seasonal climate forecast to project short-term food security outcomes through the end of December. Both Prof. Ogallo and Prof. Benson Mochoge (Director of the Agriculture and Environment program at IGAD) described the high hopes and keen interest IGAD had in the outcome of the FSOF, as food security remains a high priority for IGAD. IGAD is in the process of revising its regional food security strategy.

The FSOF process unfolded in several steps. As it was intended to be an extension of food security analysis methods currently used in the region, the forum began with a review of key concepts and methodological frameworks.

Dr. Keffing Sissoko, from CILSS, gave a brief presentation describing the CILSS structure in West Africa. With the sponsorship of nine Sahelian countries, and the support of two technical institutes, CILSS works on five major challenges to food security in the region:

- i. Lack of an appropriate agricultural strategy and policy
- ii. Low capacity and lack of market integration
- iii. Low level of agricultural product processing
- iv. Appropriate strategies for prevention and management of food crises
- v. To move towards sustainable food security and agriculture.

Methodological frameworks

Maxx Dilley, from the IRI, presented an overall analytical framework for understanding the links between climate fluctuations and food security. Households become food insecure if they are unable to meet 100% of their minimum daily caloric requirements. Baseline food security assessments suggest how different households meet these requirements in a “normal” year; e.g., what percentage of food requirements are met through purchase, through on-farm production, etc. Because households differ in these strategies, depending upon a variety of social, economic, geographic, and cultural factors, it is useful to group similar households into livelihood zones, or an area within which people share broadly the same means of production and broadly the same patterns of access to markets. It is then possible to estimate the impact that a given hazard (say a 50% crop failure) will have on a given livelihood zone. Because baseline assessments also usually gather information on response strategies (when a risk is present or a hazard occurs), this allows an analysis of how households will cope with the effects of a hazard (see appendix 2).

To understand the impacts climatic fluctuations will have on food security, we can identify a number of climate-sensitive variables, such as agricultural yields, livestock health, income-generating opportunities, and pests. Using precipitation forecasts (produced from the GHACOF results), estimates of crop production and forage conditions can be made, as explained later by G. Galu and R. Kaitho. These sectoral impacts can then be translated back into livelihood outcomes, for any area for which there are sufficiently good baseline data, sectoral models, and a climate forecast.

Epitace Nobera, of FEWS NET, described several early warning methods using in the GHA region. The general principle of early warning monitoring builds upon the collection and monitoring of the sort of information described in the first presentation: livelihood baselines, crop planting and harvest data, rainfall forecasts and observations, etc. The convergence of evidence from several different information streams may suggest an anomaly, for example in crop production. This is usually verified through field visits. Accurate mapping of baseline livelihood zones is critical to this process also,

to understand the impact of hazards on households and to correctly target and plan assistance. Constant monitoring of crop and livestock conditions is critical so that early warning situations can be identified in advance and situations can be updated as situations unfold. FEWS NET technical assistance centers on livelihood zone mapping, crop condition forecasts and monitoring, and livestock condition monitoring. The RATIN project also monitors market prices. The FEWS NET early warning system uses the concept of “hotspots,” in which areas to watch or situations in need of a response are mapped and monitored, with regular updates issued. These updates are issued in various media, and FEWS NET often gives ad hoc briefings to government ministries.

Ali Ahmed and Ayub Shaka described in more detail how to assess and map Livelihood Zones, and how to analyze the impact of specific climatic outcomes on these livelihoods. The typical household in a livelihood zone can be profiled, according to the sources and amount contributed by each source to household food requirements. Combined with information on the wealth groups in a given livelihood zone, an overall profile of food security for the whole zone can be graphed, as ideally, quantitative information on food sources is collected. Then, hazards such as drought can be translated into livelihood impacts. Using quantitative models, scenarios of outcomes can be downscaled into impacts at the livelihood zone level, as shown in the example below.

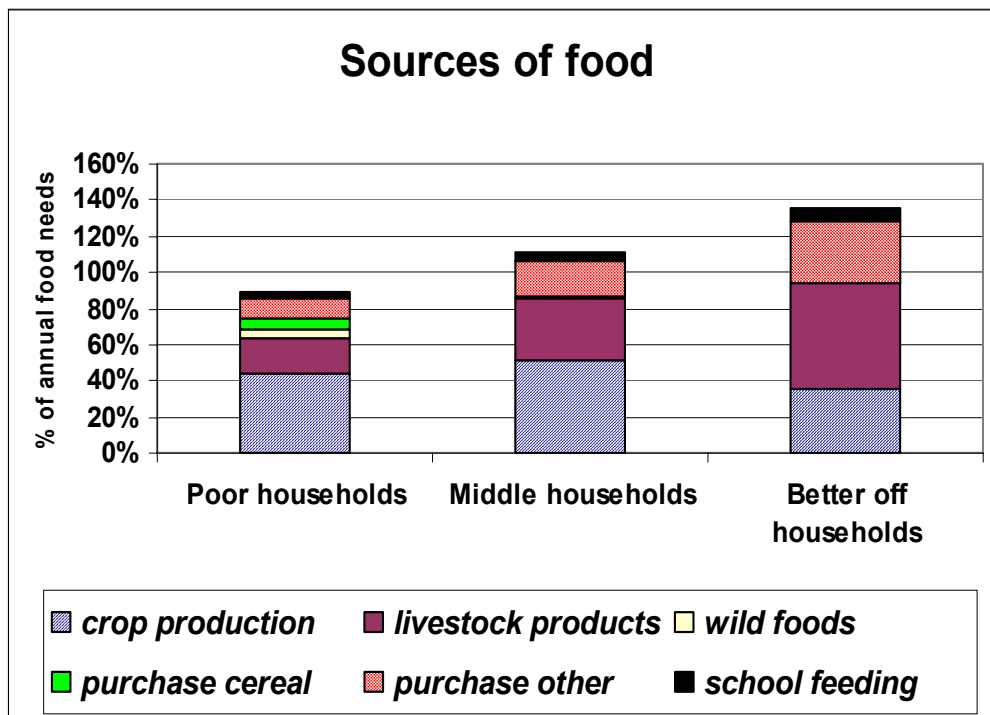


Figure 1. Wealth groups within a livelihood zone

KWALE			
Income Source	Baseline	Current	Outlook
Livestock	18	9	12
Food Crop Prod	22	0	15
Cash Crop	15	10	15
Fishing	4	8	4
Labor Formal	7	0	7
Poultry	7	3	3
Casual Labor	10	3	10
Hunting and Gathering	1	2	1
Small Business	8	0	8
Petty Trade	3	0	3
Firewood	3	6	3
Remittances & Gifts	2	4	2
Deficit	0	55	17

Figure 2. Impact of climate hazard on household food security

Within the GHA, much of this activity is ongoing and incomplete. For example, the crop forecast tools are new, and the livelihood zones have not been mapped or analyzed in all countries, etc.

Ben Watkins, WFP Kenya, added great impetus to the efforts of the FSOF with a presentation on contingency planning. The objectives of contingency planning are to reduce the lead time needed for responding to crises, because the situation has been monitored, capacity for responses have been assessed, options have been identified, and ultimately responses, when required, are more effective. Contingency planning is generally needed when there is uncertainty surrounding predicted outcomes (as with climate impacts), where there are data gaps, where response capacity is uncertain, where the impacts of a hazard (once it occurs) are high, or where access is limited. Plans should be made before events occur. An ideal process which would include the use of COF products, would include several steps. The first is a process of translating hazards into impacts and then needs, as described in the previous presentations. The second phase involves assessing response options and capacities, along with costs. Hazard analysis is a

key part of this, and scenarios of most and least likely (or best and worst) outcomes can be generated with models. Ben described an example of assessing flood hazards in the Tana River basin. Combined with impact analysis, these results can be used for response analysis, based upon needs, capacities for response, logistical issues, distribution of needs. Normally a timeline for the response is also part of a contingency plan.

In order to realize this ambitious plan, however, improved models, better data collection, much greater information sharing, and the use of non-traditional risk analysis and economic models are all needed. The FSOF is one small step towards this goal.

Process of creating outlooks, from COF and current situation

The process of creating the food security outlooks was planned to be a combination of technical tools and expert judgment. The first step was to translate the GHA consensus climate outlook to precipitation maps for the region and countries. George Odweso from the University of Nairobi (UON) explained a process for doing this, as did Ayub Shaka from Kenya Metrology Department (KMD).

In the ICPAC/UON model, station specific cumulative rainfall data are used to downscale the probabilistic forecast for Kenya. Although this model is still being refined and validated for the region, this is a powerful tool, as it enables distribution-free maps to be produced.

In the USGS/FEWS NET process, areas currently at risk due to recent or chronic weather patterns are identified as areas to watch closely. For example, the northern part of Somalia has suffered from four years of drought. The impacts of climatic events are translated into outcomes that might affect food security, for example drought usually reduces crop yields and pasture and browse production. Using a USGS/ FEWS NET Agroclimatology model, the probabilistic COF forecast is translated into a precipitation map for September through December, 2004 (SOND 2004) (see Figure 3).

In order to accommodate the probabilistic nature of the forecasts, the precipitation maps are developed for three scenarios: worst case, best case and most likely. The most likely scenarios are presented in this report and were used by the countries to create their food security outlooks.

The second step was to combine assessments of the current food security situation (presented in below) with sectoral outlooks. These quantitative forecasts were interpreted and refined with expert judgment.

The group recognized that food security is a product of multiple factors, a number of which we did not include in this FSOF. The only health-related impact we considered was malaria, but it was believed to be weak in the coming season. We had very little information on prices, and it is difficult to predict them a season ahead.

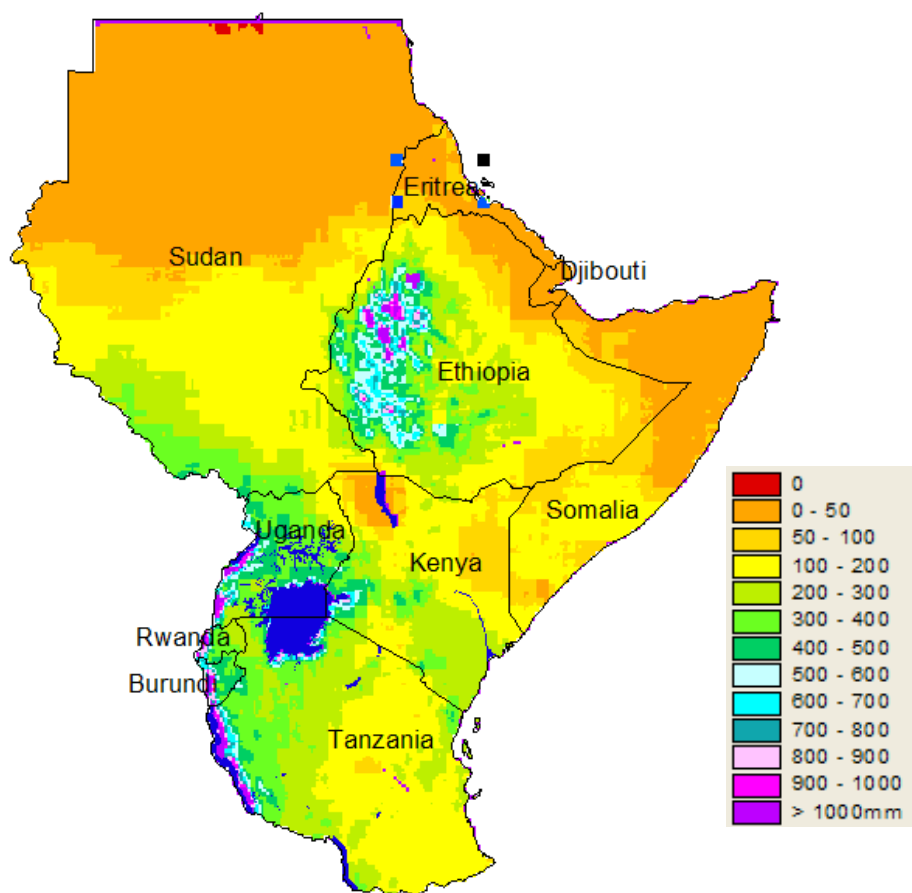



Figure 3: Mostly likely rainfall scenario, SOND 2004

Sectoral outlooks

 [C11] anticipated crop outcomes for each country were estimated using a model developed by Gideon Galu of USGS/ FEWS NET. As explained by Ayub Shaka, this model is produced using the precipitation estimates for the coming season and translates these into crop outcomes at the end of the growing season. The chief model parameters are soil characteristics, crop type, and rainfall, with rainfall the most variable factor. Anomalies are calculated against an eight-year median, using the crop statistics for each country. As maize is a principal staple food crop, the estimates are based on maize outcomes. The maps are developed for each country, and they can also be downscaled to the district level. It is important to note that these are estimates of crop conditions (or production levels) at the end of the current growing season, in this case the beginning of January. The colors indicate how the crops are performing relative to the eight-year average, so they are an indication of how anomalous the crop production is this season.

Two maps are presented below, as the precipitation cycles for northern and southern GHA are different. In the North (including Sudan, Ethiopia, Djibouti, Somalia, and part of Northern Uganda/Kenya, the rainfall season of interest is from June to August. In the South, the season is September through December.

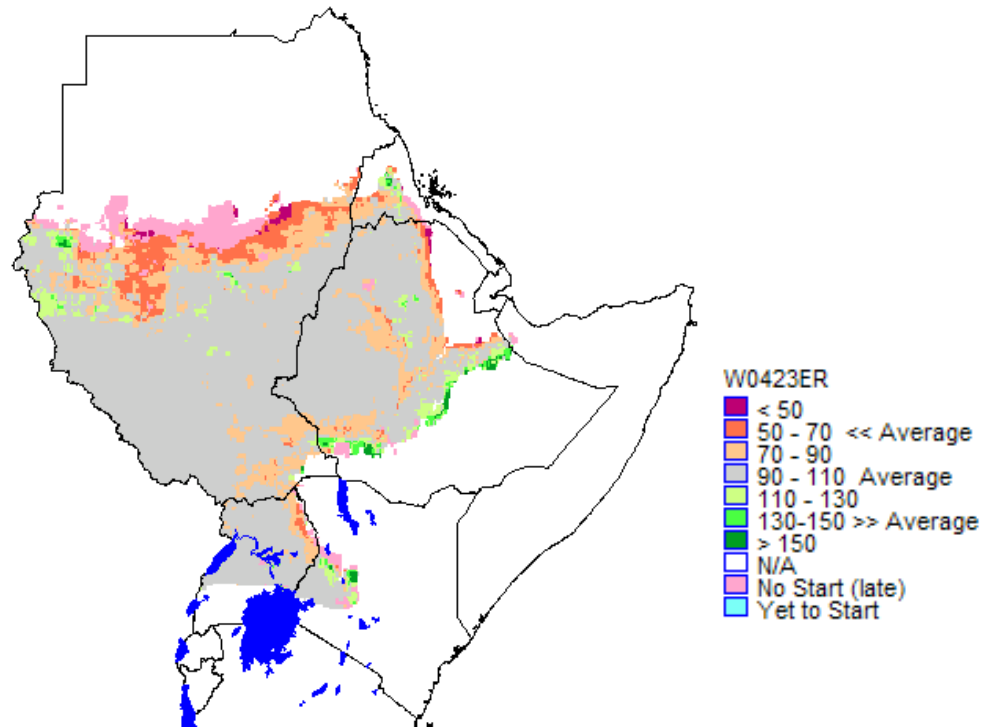


Figure 4. Expected crop performance anomalies, northern GHA

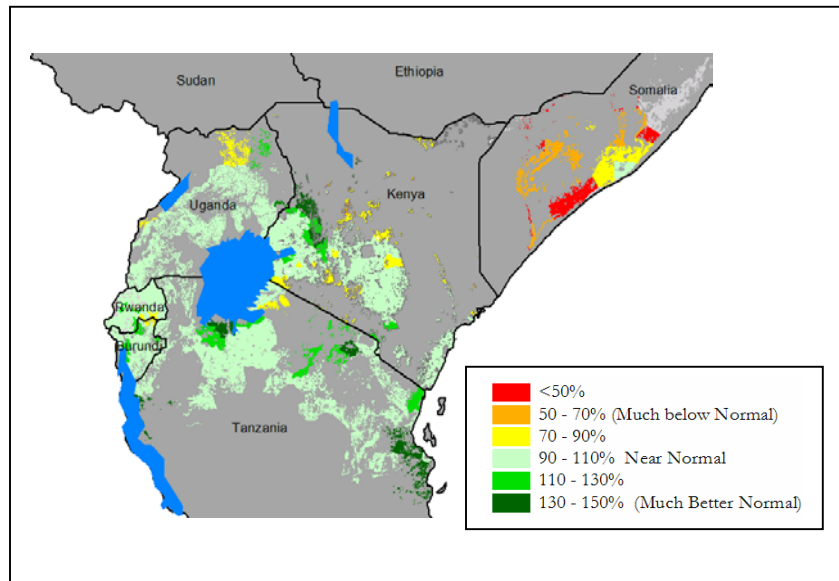


Figure 5. Expected crop performance anomalies for southern GHA

As many communities in the GHA are agropastoral and pastoral, the FSOE also included methods for estimating the impact of climate on livestock. The impact of climate variability on livestock was explained in two parts. Robert Kaitho from Texas A&M University (TAMU) who works with the Global Livestock Collaborative Research Support Program (GLCRSP) on the Livestock Early Warning System (LEWS, which has since become LINKS), described a model for estimating the forage situation two months in advance for the four GHA countries of Kenya, Ethiopia, Uganda and Tanzania. The process uses estimates of Normalized Difference Vegetation Index (NDVI), which can be obtained from remote sensing. NDVI is commonly used to indicate the state of vegetation growth or “greenness”, and can be monitored to track pasture and browse conditions in semi-arid rangelands. Using models such as PHYGROW and ARIMA, the NDVI conditions are translated into forage conditions. Using an NDVI forecast developed from the COF14 outlook, predicted forage conditions can also be calculated. Currently, the forecasts are only reliable for up to 60 days in advance (and are updated every 10 days), so the outlooks could only rely on estimated conditions through the second dekad of October. However collaborative steps are being taken to extend the lead time of these forecasts by incorporating additional climate forecast-based information into the forage model. The predicted deviations from the long-term (since 1960) forage conditions are presented below, as this is the more reliable product for comparison and monitoring of at risk situations. Note that the colors on the map indicate whether pastures are improving or declining.

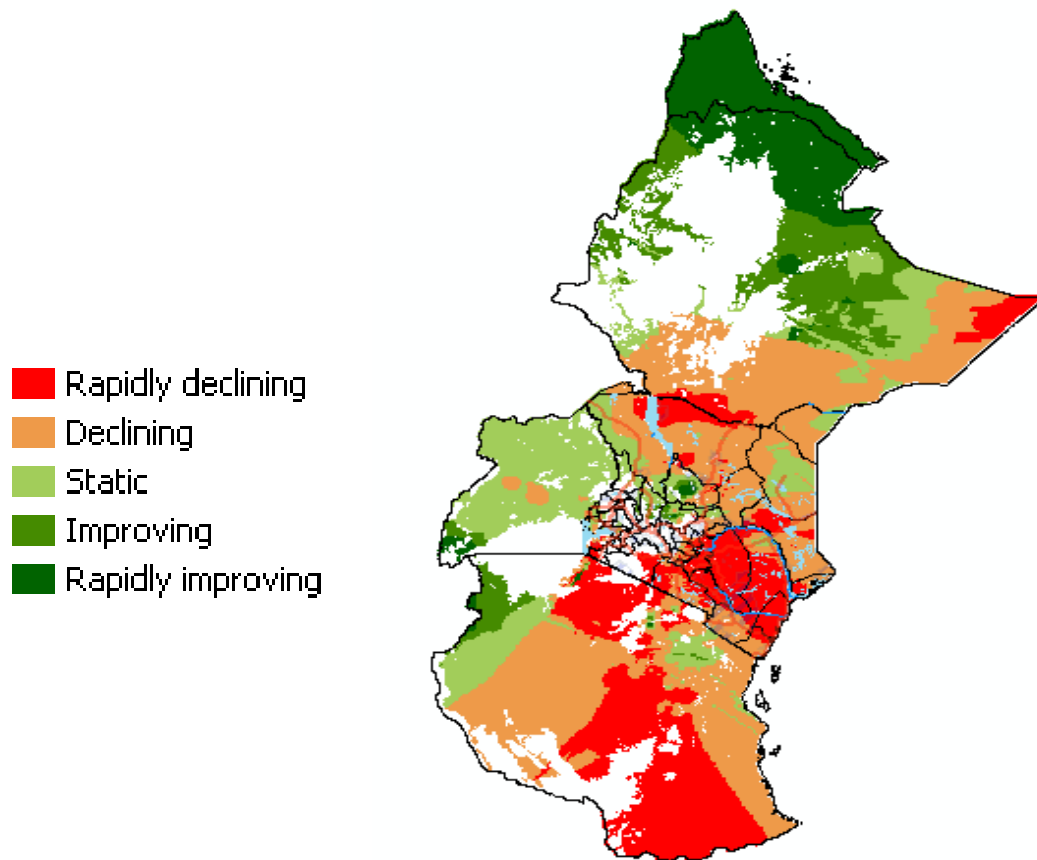


Figure 6. Projected forage deviations by second dekad, October 2004

Paul Rwambo, of the African Union Inter-African Bureau for Animal Resources (AU-IBAR), then explained how to translate this into livestock outcomes. Over 80% of the GHA can be classified as Arid and Semi Arid Lands (ASALs) where the livelihood of the population is heavily dependent on livestock. As the ASALs experience chronic climate fluctuations, these fluctuations drive the nomadic systems of most pastoralists. For pastoralists, livestock assets are the key determinant of food security, as their income depends upon their ability to sell healthy livestock. The sales are influenced by livestock conditions and numbers, availability of accessible markets, disease outbreaks, household cash needs, and security. Since 2002, IBAR has been working with the IRI, ICPAC, USGS, the Regional Center for Mapping of Resources for Development, and other partners on a model to monitor and forecast environmental conditions associated with Rift Valley Fever (RVF) viral activity. RVF is transmitted by mosquitoes and transmission rates are greatly affected by climate. The last RVF outbreak, which came in the wake of the heavy rains caused by the El Nino rains of 1997-8, the ban on livestock sales imposed by Middle Eastern countries devastated the GHA livestock sector. Over \$300 million was lost annually, and sales are still not up to pre- El Nino levels. Currently, many pastoral areas in Kenya are experiencing drought, and a forecast could give pastoralists more lead time to increase their off-take, the most economically sensible

response to droughts. Both models are products which can be used to raise awareness and modify the coping strategies of pastoralists.


Normally, locusts would not be a concern in the GHA, but Tsegay Wolde-Georgis (IRI) explained that there have been recent outbreaks in West Africa, due to anomalous high rainfall in the Sahel. Moist conditions favor locust breeding, and current outbreaks in West Africa have spread to northern Nigeria. If rainfall conditions are favorable and the locusts swarms reach Darfur, then locusts could rapidly spread to the GHA and beyond. FAO recently assessed the potential for an outbreak in the Sudan, as rains have begun there. Constant monitoring of the situation is required, as locusts travel very quickly.

The relationship between malaria epidemics and climate was explained by Andrew Githeko, of the Kenya Medical Research Center (KMRC). He first showed how anomalies in both rainfall and malaria cases are correlated. Current scientific understanding is that malaria parasites will breed in mosquitoes under conditions of high rainfall and high temperatures. This makes predicting malaria in highland areas of semi-arid Eastern Africa challenging. He presented data and model results from Tanzania, Kenya and Uganda. During the El Nino rains of 1998, a malaria outbreak occurred in the normally malaria free Northeast of Kenya. These outbreaks become epidemics in such areas as immunity is low. For the SOND 2004 season, however, Dr. Githeko predicted that the likelihood of outbreaks in non-endemic areas is low, as rainfall will most likely be near normal to below normal.

Current Food Security Situation

The next part of the workshop was devoted to presentations by national food security experts from each country. Each country team described the livelihood zones in the country, along with the factors contributing to the current food security situation. “Hotspots” of food insecurity were noted, as these are the areas to be highlighted in the forecasted outlooks. In some cases livelihood zones maps and/or current food security maps were not available at the time of the forum.

The national assessments were used to create a regional synthesis of the current food security situation. Trans-border food security patterns were discussed and the assessments reconciled where appropriate.

Burundi: Burundi is a densely populated country where over 90 percent of the agricultural area is devoted to food crops; over 90% of the population also depend upon agriculture for their livelihoods. The civil conflict in 1993 severely diminished the national food security situation, which has not recovered to pre-crisis levels. Currently, both drought and epidemic diseases can cause food insecurity, as can any resurgences of civil strife. Five “livelihood” zones were described for Burundi, as shown pw.

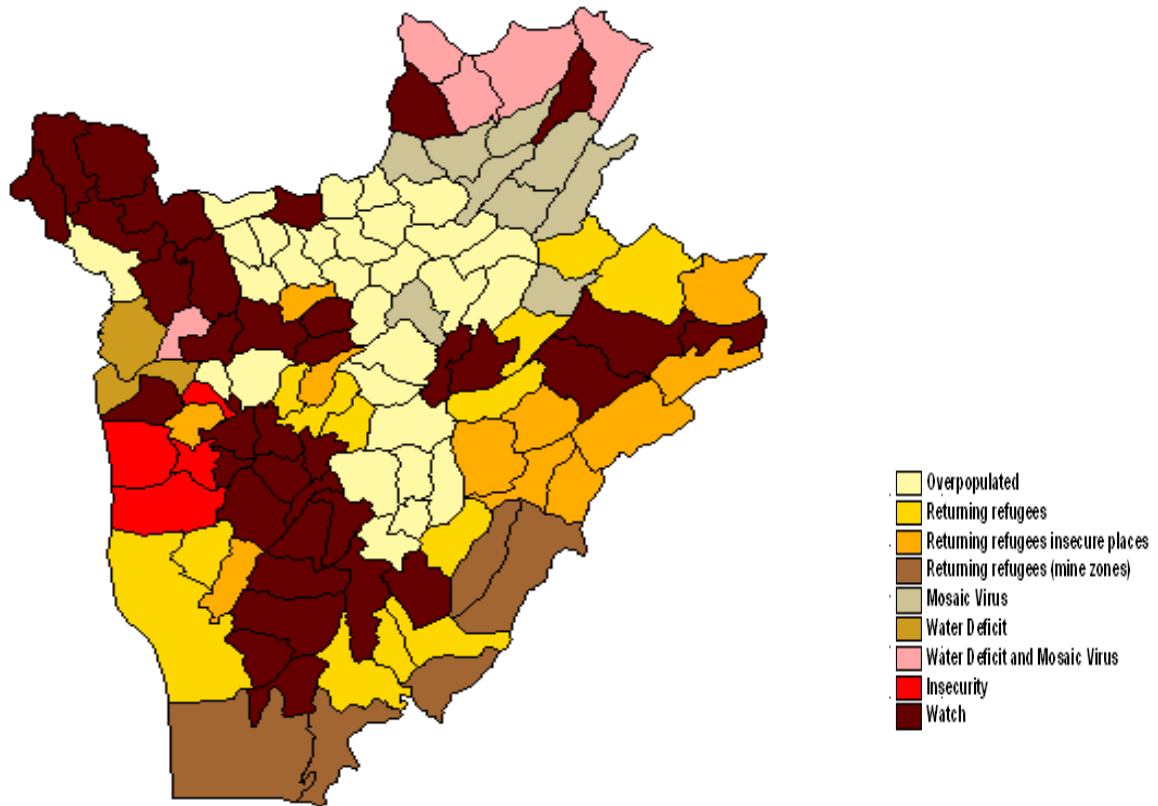


Figure 8. Hotspots, Burundi

Djibouti: Djibouti is strikingly different from other GHA countries, in that about 80% of its population is urban, with possibly 65% located in the capital. Six livelihood zones have recently been assessed and mapped (figure 9). Due to the high level of urbanization and the arid climate, most of Djibouti depends upon imported food. So the major indicator tracked for assessing food security in the country are those related to income and expenditure (e.g. staple food prices). Thus, the areas directly affected by climate are the pastoral zones, where people live a largely nomadic lifestyle. Currently, 100,000 people are at risk of food insecurity, due to the increase of staple food prices and below-normal rainfall last season and the predicted shortfall in the main Karan season from July to October.

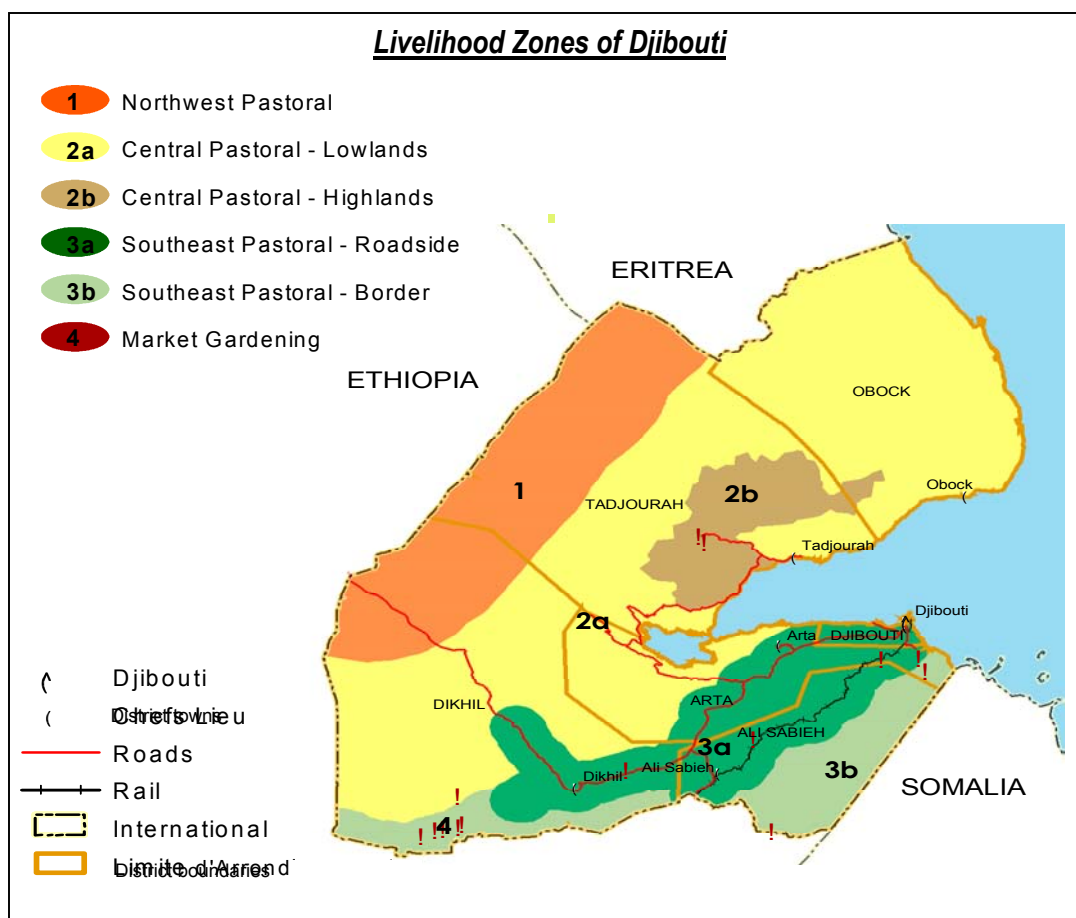


Figure 9. Djibouti Livelihood Zones

<< insert estimated rainfall or hotspots >>

Ethiopia: As is the case for Sudan, Eritrea, and Djibouti, the major rains in the grain producing highlands of Ethiopia occur between June and September. The March to July rains were generally poor for most areas, although distribution throughout Ethiopia is varied. The ICPAC prediction for the major Kiremt or Meher season was for increased likelihood of near to above normal rainfall over parts of northern and southwestern Ethiopia, and below to near normal for much of central, western and eastern Ethiopia. Early assessment data (June-July) produced the following map of hotspots, with the North and Western crop areas generally food secure, with the exception of parts of Tigrai. The southern and eastern agropastoral areas are food insecure. In these areas the crucial Meher rains started late, so prospects for recovery are not good. Food security hotspots are shown in figure 10.

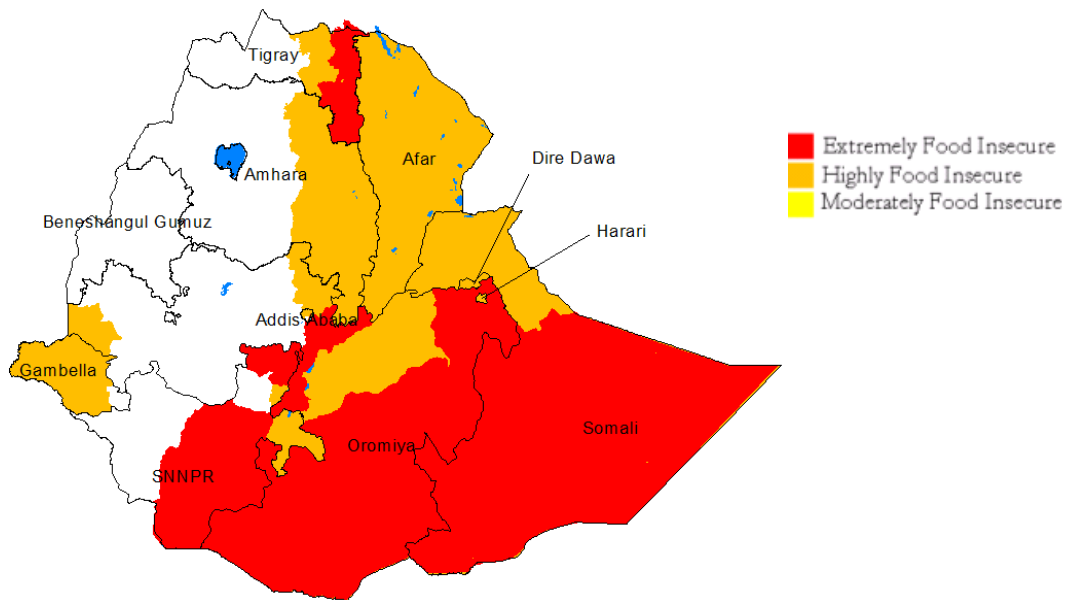


Figure 10. Food insecurity hotspots, Ethiopia

Kenya: The four major livelihood zones of Kenya are shown in figure 11 (a more detailed livelihood zone map is not shown here).

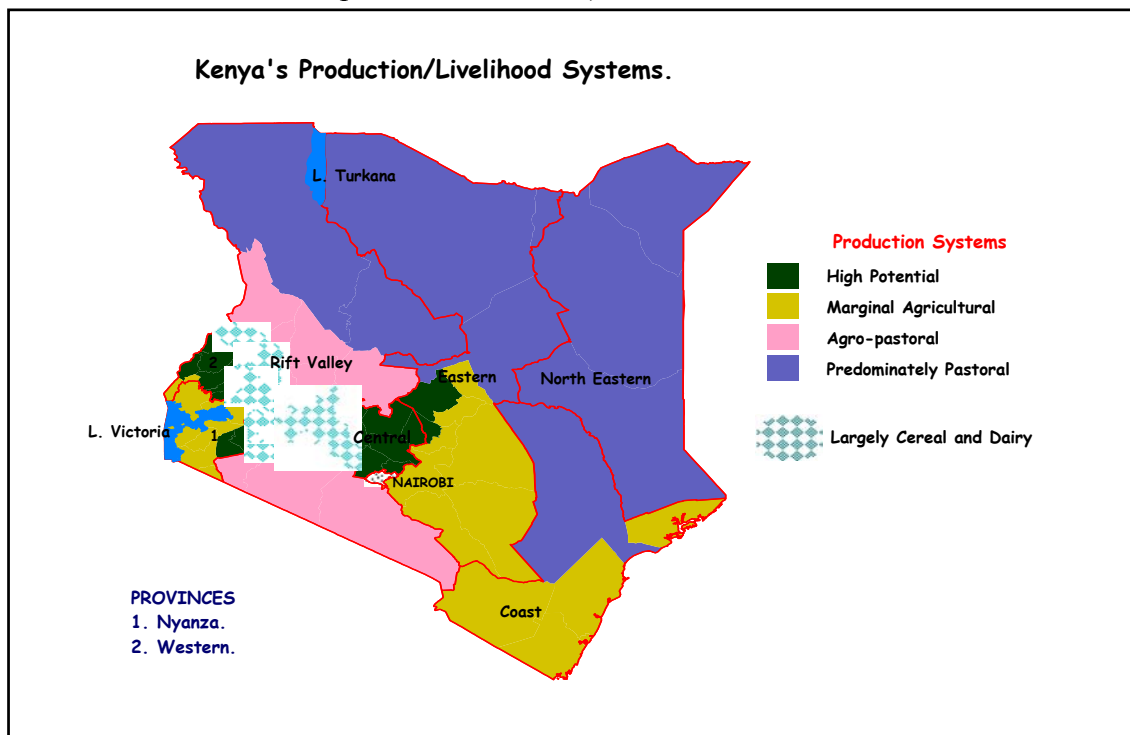


Figure 11. Livelihood zones for Kenya

The “long” rains from March to June were disappointing in both distribution and short duration. Crop production was affected in all but the high potential areas (Western), so the country has only 80% of normal maize production and 50% of its usual bean harvest. The predominantly livestock areas of Kenya usually experience varying rainfall, and most areas experienced their third successive season of poor and erratic rains. In July, the government declared a disaster, as 1.8 million people in 26 districts are food insecure. The appeal process for 166,000 MT of food aid has begun, and the government has also relaxed import duty on grains to help make up for the shortfall. The food insecure areas of Kenya are shown in figure 12.

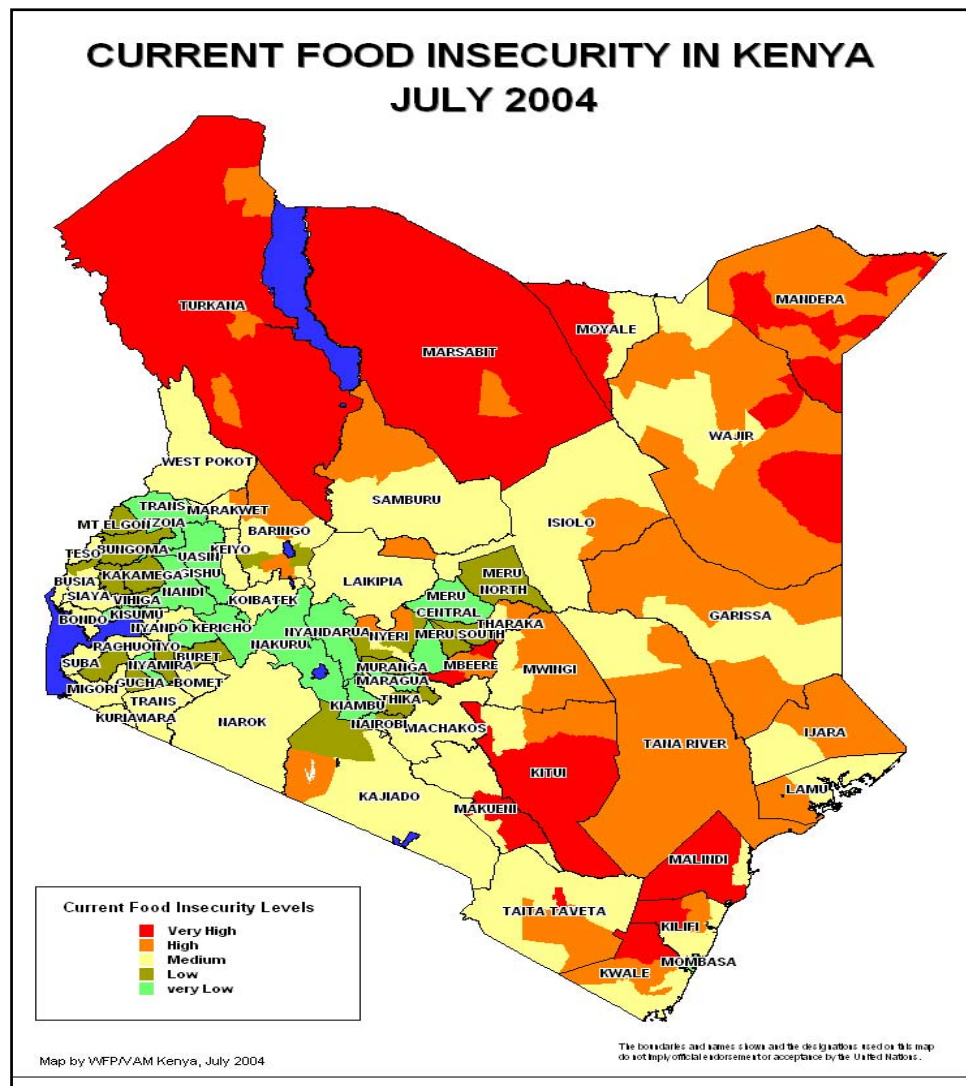


Figure 12. Food security hotspots, Kenya

Rwanda: Although Rwanda has three agricultural seasons, its agricultural production is generally insufficient, so climate variability affects food security. Although 90% of the population depends upon agriculture, their incomes from this sector are low. The most recent agricultural season (MAM) resulted in 87% of the national production requirements, as rains were short. The food economy zones of Rwanda are shown in figure 15; they vary by location, elevation and production system (agricultural or agropastoral).

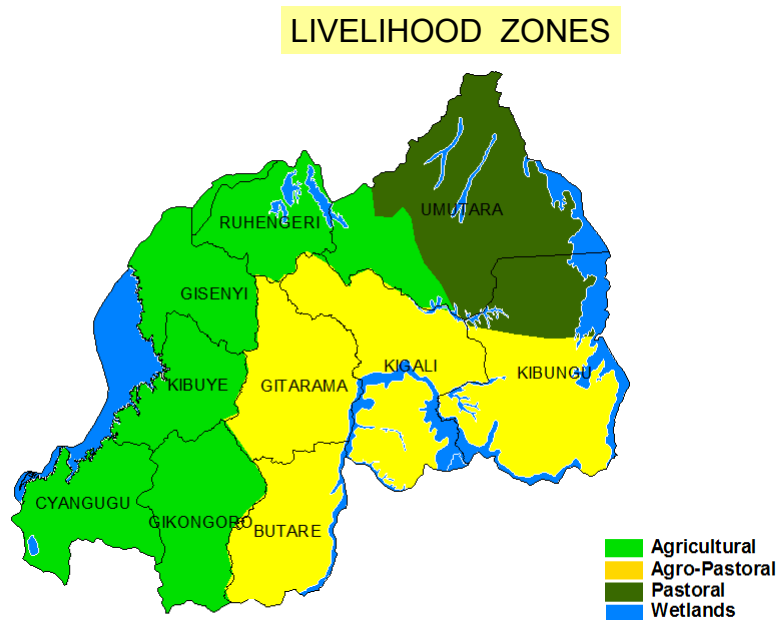


Figure 13. Livelihood zones for Rwanda

About 433,000 people are currently food insecure; the southern districts are vulnerable from drought. Food prices have been unusually high. The current hotspots for Rwanda are shown in Figure 14. The areas are colored in gold, meaning:

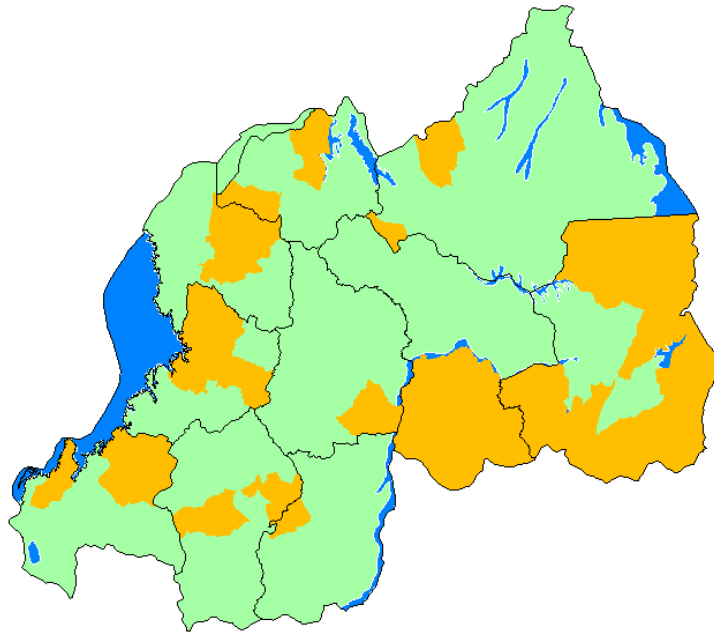


Figure 14. Food insecurity hotspots (in gold) in Rwanda, August 2004

Somalia: Somalia has a very large livestock population, numbering about 60 million. Currently, both climate and conflict are the major drivers of food insecurity in the country. The major rains are from April to June, and the 2004 season was the worst in 30 years. In many areas the 2003 rains were also disappointing. Both crops and livestock were affected. As the livelihood zones in Somalia are well-mapped, the current food security situation is well-understood, but worrying. The particular at-risk groups suffering from conflict and food insecurity total 616,300. In addition, at-risk populations with specific needs (IDPs (375,000), minority groups, urban destitute, returnees (465,000)) are also in need. There are four major hotspot areas, shown in Figure 16.

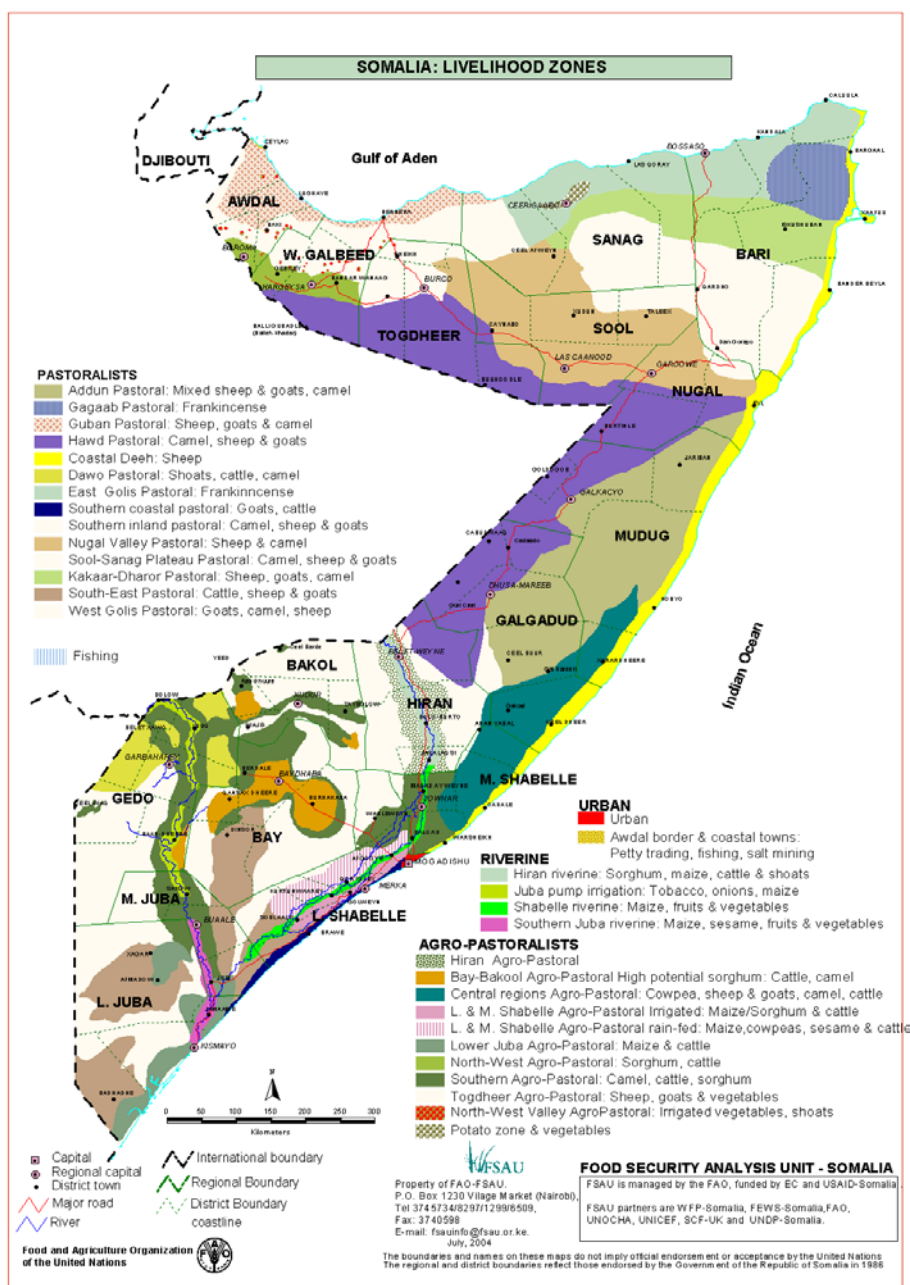


Figure 15. Livelihood zones, Somalia

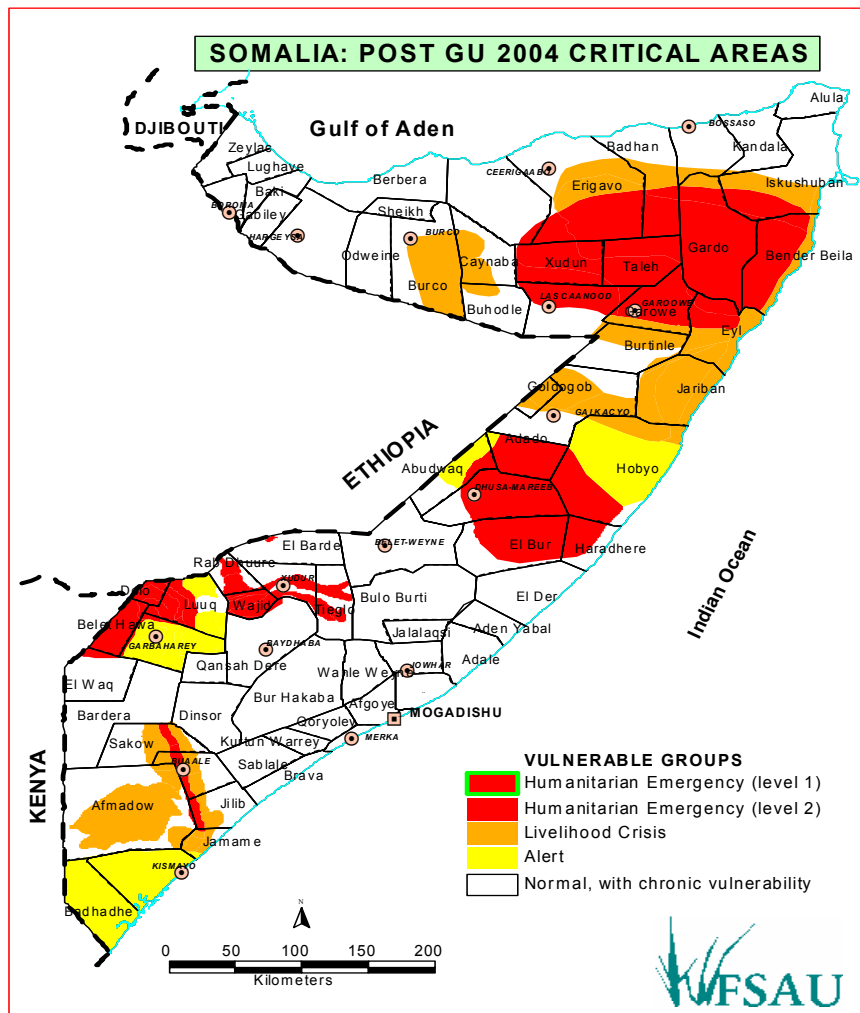


Figure 16. Hotspots, Somalia, August 2004.

Sudan: Seventy percent of Sudanese depend upon agriculture; climatic events have a significant impact. The rains in June to August were below normal, causing shortages in food and forage, as indicated by below-normal vegetation conditions. The West Darfur region is currently highly insecure due to the ongoing conflict, which has displaced about two million people and some 180,000 people have sought in the neighboring Chad. It is estimated that the conflict is affecting the livelihoods of nearly three million people, making it one of the biggest humanitarian crises in the world.

In Southern Sudan the harvests were good last season, and food aid has been timely, so the food insecurity situation is improving. However, a number of areas of Southern Sudan are affected by inter-tribal conflicts, which is likely to undermine the food security

situation. In Bentiu and in the Lakes region, people are unable to cultivate sorghum because of insecurity caused by inter-clan fighting. Similarly parts of Eastern Equatoria are affected by insurgence.

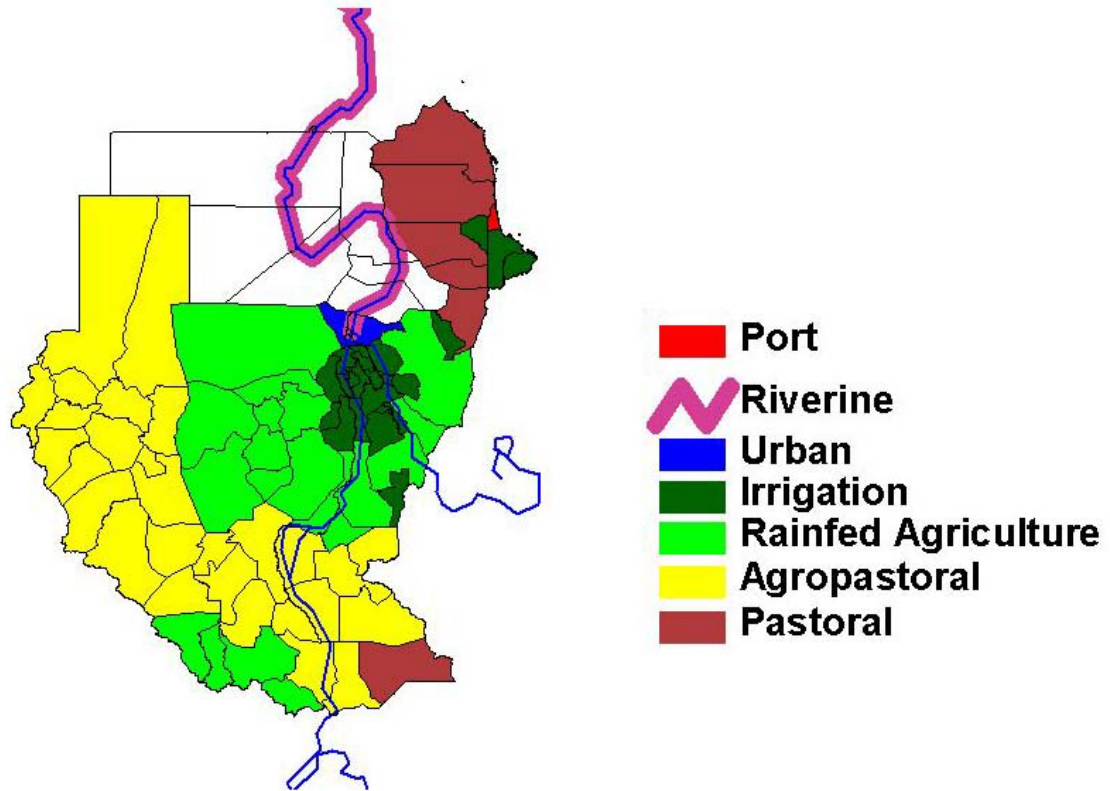


Figure 17. General livelihood zones, Sudan.

Tanzania: There are four major livelihood zones in Tanzania, as shown in figure xx. The GHA COF forecast applies primarily to the northern part of the country. The 2003/4 harvest was overall better than the previous year, but there are still food insecure areas in the eastern and northern areas, as shown in figure xx. Although the most recent assessments are from May, and need to be updated with information from currently ongoing assessments, several districts are below the 100% self-sufficiency ratio (SSR), as a result of below-normal rains.

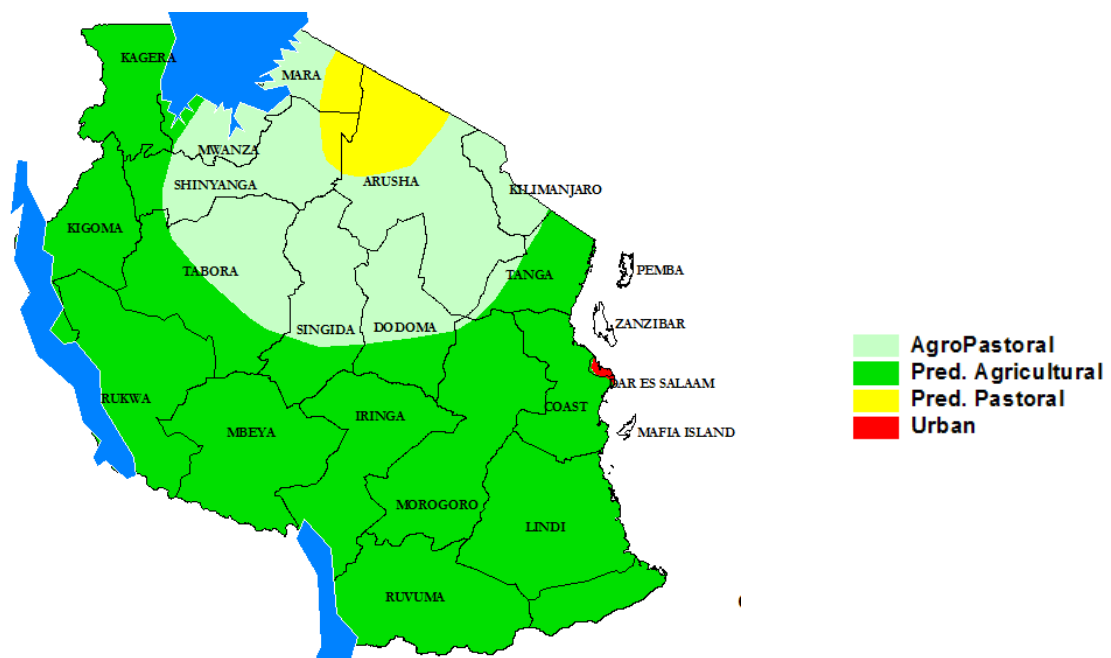


Figure 18. Tanzania Livelihood Zones

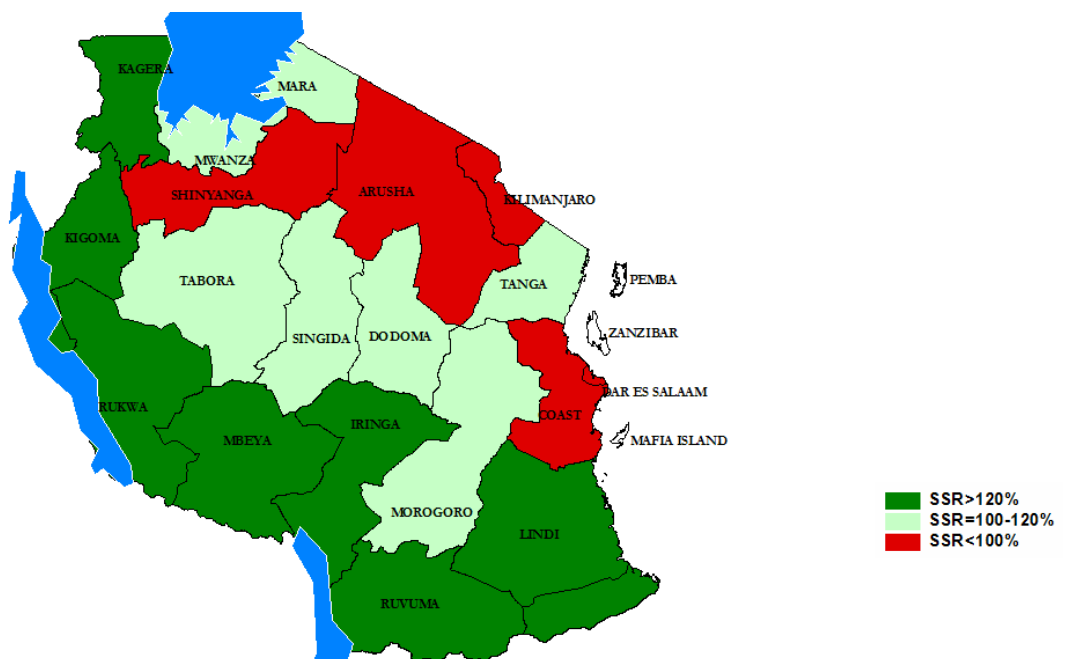


Figure 19. Tanzania Self-Sufficiency Ratios

(This map should be replaced, for consistency; SSR is not a criterium we would use)

Uganda: As in neighboring countries, the “long” rains from March to May were disappointing both in duration and distribution for much of Uganda. The rains lasted for one month, not three, and were followed by a long dry spell. This resulted in food shortfalls throughout the country. Assessments were carried out in high risk districts, with the following indications. Karamoja, an agropastoral zone, is food insecure due to the poor rains. The neighboring region including Gulu is chronically insecure due to the ongoing conflict, which means people do not have access to their fields. Moving over to the west, the situation is mixed, with some food insecurity from the poor rainfall. This is similar in the south. Roughly a million households are facing food shortfalls currently.

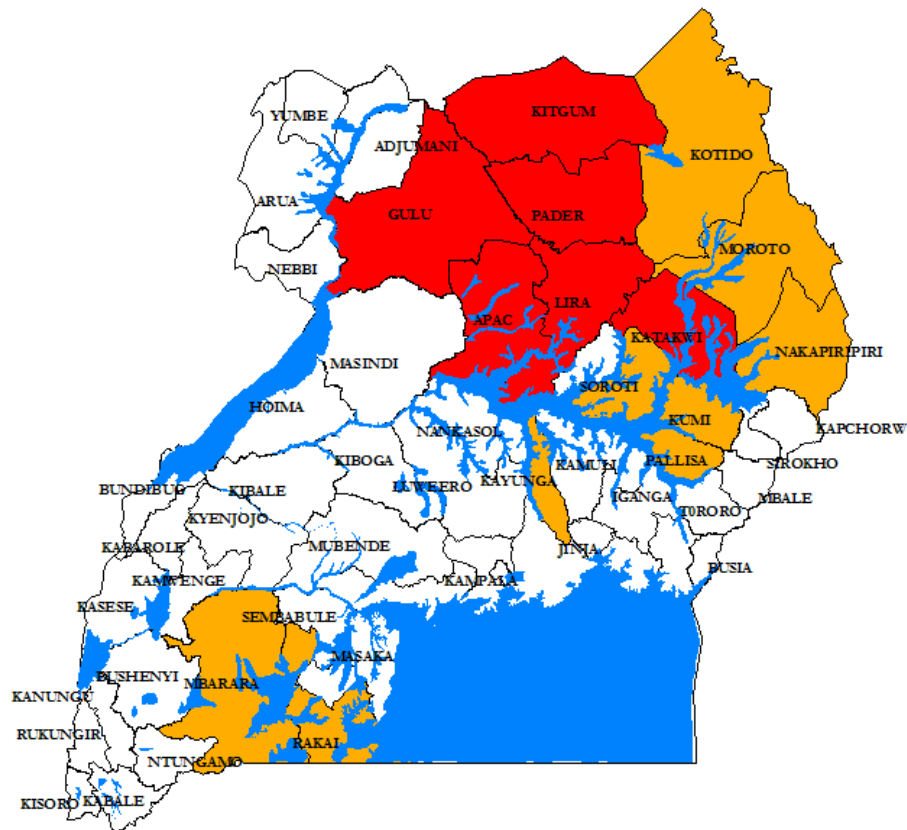


Figure 20. Food insecurity hotspots, Uganda, August 2004.

Current regional food insecurity situation: Gideon Galu, USGS/FEWS NET, prepared the following map which summarizes the regional food insecurity situation for the GHA. Note that some of the country-level detail is obscured in this map. The regional hotspots are indicated in red (humanitarian crisis), orange (high food insecurity) and yellow (moderately food insecure areas). These are the standard definitions used by FEWS NET as follows: an area is considered to be in a state of humanitarian crisis if the population is starting to leave the area to find food, malnutrition rates are high, and emergency assistance is urgently required. Highly food insecure means that populations cannot meet their food needs during the current year without reducing consumption or drawing down assets to such a degree that they compromise their future food security. Moderately food insecure means that populations can meet their food needs in the current year, but need to be closely monitored. Should market access or income from secondary activities be compromised, these populations might become highly food insecure in the current year. At the regional scale, Western Sudan, Southern Ethiopia, northern Somalia, and northern Uganda are the most critical areas. Northwestern Kenya, southern Somalia, Eritrea, northwest Uganda and northern Tanzania are the highly food insecure areas. Northwestern Kenya, southern Somalia, Eritrea, northwest Uganda and northern Tanzania are the highly food insecure areas.

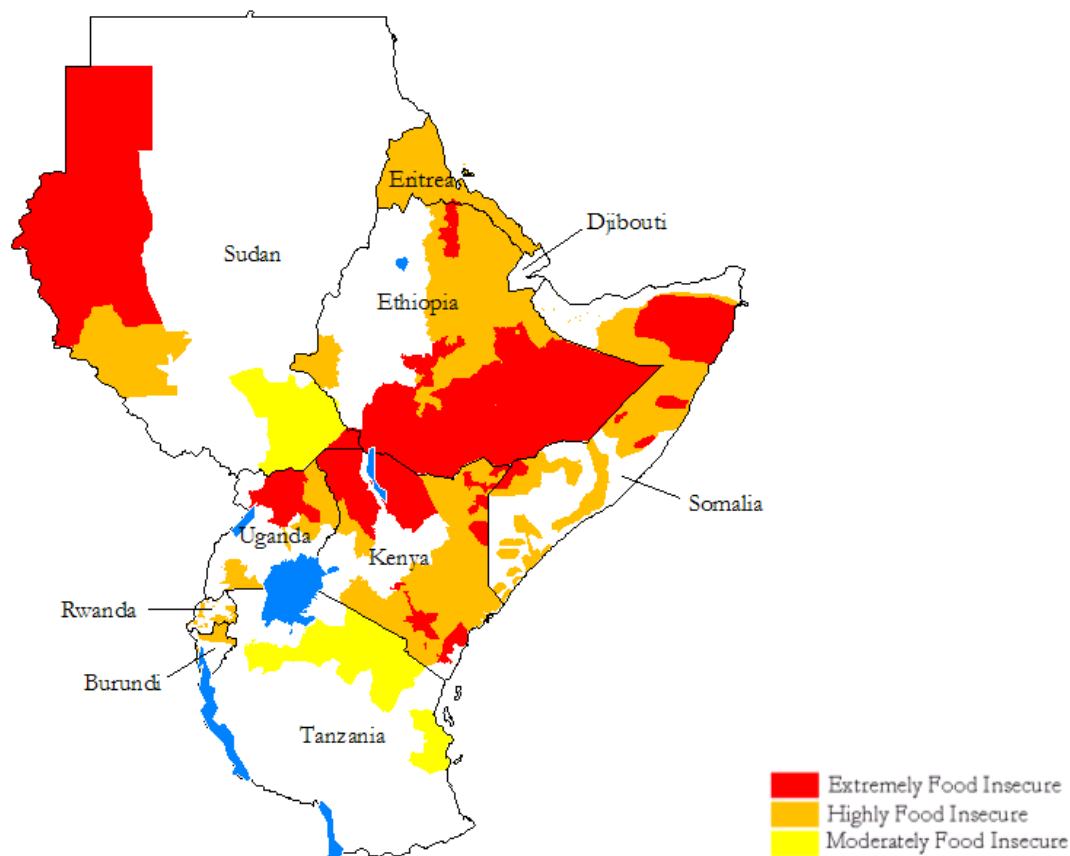


Figure 21. Food insecurity hotspots for GHA, August 2004.

Food Security Outlooks

Each country team spent several hours using the crop, livestock and rainfall forecasts, in combination with the current food security situation and their expert judgment, to issue both an outlook map and a statement about the predicted food security situation through December.

It is important to note that while climate has a major impact on food security within the region, not all factors that determine food security outcomes depend on climate. Market behavior, for example, can affect prices for both buyers and sellers in ways that are not necessarily tied to climate. Current food security assessment methodologies have difficulty fully capturing the range of household coping strategies in some cases. Livelihood zones have not been completely and consistently mapped for the region, making assessment of climate impacts more subjective in some cases than in others.

The food security outlooks below are felt by the country delegates present to be the most likely food security scenarios for September through December (unless otherwise noted). Nonetheless, as with any forecast, less likely outcomes may ultimately materialize. Unlike the case of climate forecasts, where probabilities of different outcomes are specified, it is not currently possible to assign probabilities to, or even specify the uncertainty of, the food security outlooks presented. Over time, efforts will be made to generate the food security outlooks more systematically and to introduce probabilities and verification of the results. The food security outlook is based on the climate outlook; the behavior of factors affecting food security that partially affected or unaffected by climate is assumed to be governed by historical probabilities.

As this was a first time exercise, the outlooks presented here are experimental and should be considered as scenarios. Many of the presentations assume that factors other than climate will not change, for example the supply of inputs and availability of markets and fair prices. In Tanzania and Uganda, needs assessments in the most at risk districts are still ongoing. Information for Ethiopia has to be confirmed. The FEWS NET definitions of food insecure areas are not commonly used in all countries, so there was uncertainty about how to label “hotspot” areas, reflected in the somewhat inconsistent maps. In addition, the delegates were not necessarily active members of food security networks, were not very knowledgeable with livelihood analysis, and had not always consulted with other FS partners prior to coming to the FSOF.

Burundi Food Security Outlook: According to the forecast map, Burundi will experience rainfall ranging between near normal to above normal in most zones in SOND. However, there is high probability of below normal precipitation in the Northern Zone and therefore, production will be below the average of the normal yield. In the same region, the cassava mosaic virus is devastating crops, reducing yields. The virus is progressing toward the central zones.

In addition, Bujumbura province, located in the West, has been insecure for some time due to civil conflict. The population will not be able to go to their fields, although the

rainfall is expected to be near normal and the soils are very fertile. We consider the zone to have a poor production and the zone should be classified as highly food insecure (in red). The hotspot areas are presented in the regional food security outlook map, below (figure 25).

Djibouti Food Security Outlook: There has been a delay of the onset of rains in the main season (July – October), but the current COF indicates that the situation will improve. However, the staple price (Rice and Kerosene) increase is of great concern. The total estimated at-risk population for the coming season is approximately 100, 000, with around 50,000 highly food insecure in the Northwest and South East border zones. ??? why are the hotspots in yellow?? Are these the FEWS NET definitions?

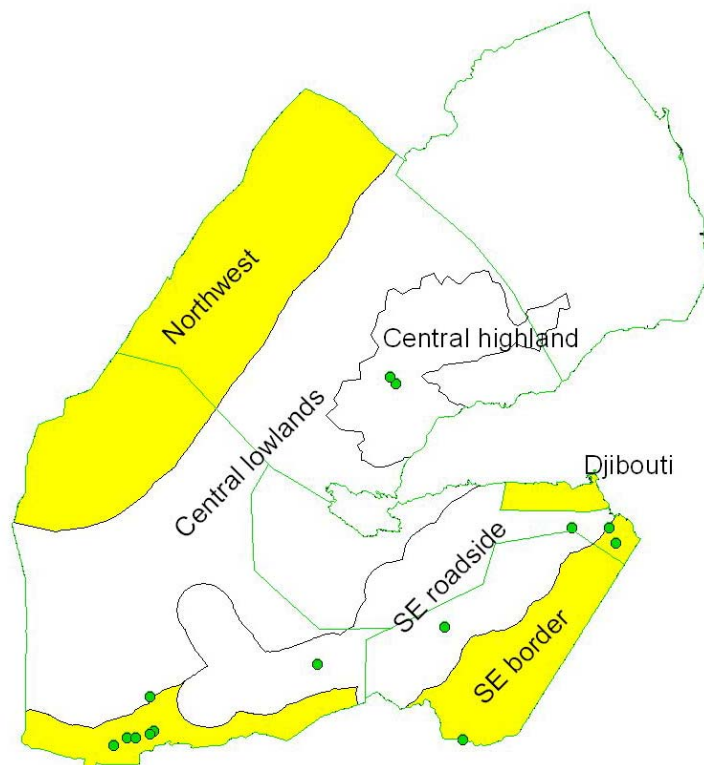


Figure 22. Djibouti Food Security Outlook

Eritrea Food Security Outlook: Most of the country has suffered drought for past 4 years, and this year also. The MAM rains were below normal. The “long” season (JJAS) onset of rains was very late. July was dry, August rains have been ok but not enough to prevent crop failure and forage condition decline. Multiple factors affect food security,

including war- affected IDP camps, returnees from Sudan, and drought. Eritrea also mentioned concern over the potential threat of locust outbreaks. The areas at risk are:

- War affected IDP camps (GB & Deb)
- Returnees from Sudan (GB , NRS)
- Drought affected (pastoral and agro-pastoral areas) (NRS, ANS)
- Locust potential threat Infestation area (GB & Deb, NRS, ANS)

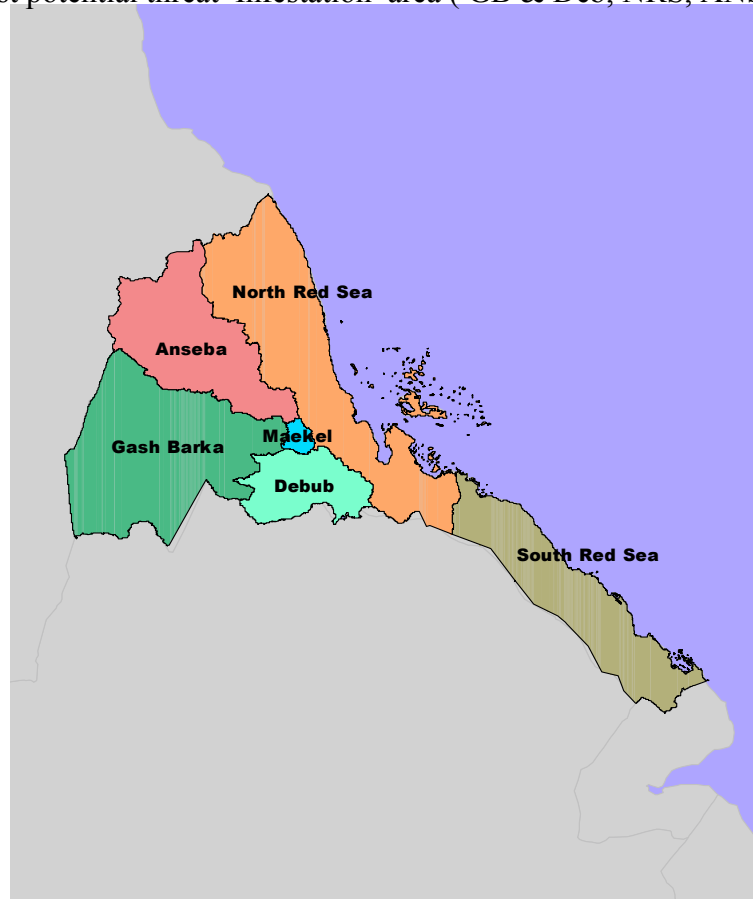


Figure 23. Map of Eritrea

Ethiopia Food Security Outlook: The food security outlook for Ethiopia will improve in the north, with the exception of part of Tigrai. Although the South/South East region of the country generally benefits from SOND rains, the GHACOF forecasts that these will be below normal. Thus the forage forecast below shows that pastures will not recover through October. But overall the food security situation is forecast to improve in a large area of the south, with the border areas with Somalia remaining extremely food insecure. The summarized food security outlook for Ethiopia is shown in the regional map, Figure 25 below.

Kenya Food Security Outlook: The situation in the pastoral and agro-pastoral areas (currently in the red - orange colour) is expected to worsen and the numbers of affected people most likely will increase because:

- (a) The forecast for these areas is of below normal rainfall
- (b) The September - December rainfall season is not the main season in these areas; and

- (c) The water, pasture and browse situation has deteriorated to extremely low levels and cannot attain full recovery in one rainfall season even if normal rainfall is received.

The food insecurity situation is likely to improve in low land areas of Central and Eastern Provinces because:

- (a) The forecast is for normal to above normal rainfall for these areas;
- (b) These are key areas for short rains food production and
- (c) The situation in these areas has not deteriorated very much

The situation along the coastal strip may improve slightly due to favorable rainfall forecast for the areas.

In all the other areas, the situation is expected to remain the same.

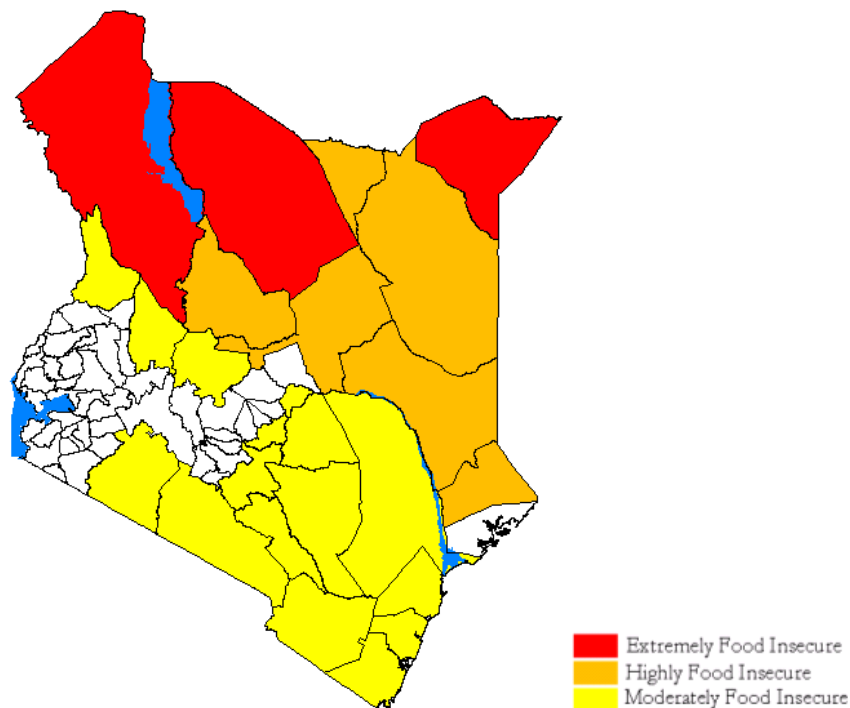


Figure 24. Kenya Food Security Outlook

Rwanda Food Security Outlook: As the current food insecure areas in Rwanda are moderately insecure, the forecast of normal to above normal rainfall for the middle third of the country should improve this situation. This leaves only a southern region of the country, where rainfall will be below normal, moderately insecure. The food security outlook is mapped in the regional map (Figure25) below.

Somalia Food Security Outlook: There is potential for crop failure in key agricultural areas in Southwestern regions, as the June to August rains were poor. The pastoralists in lower Juba are already under stress, which has been increased by migration from Kenya. In the Central area, pastoralists under stress from inadequate recent rains and on-going long term drought. Thus all of these areas will become moderately food insecure, with some already highly insecure areas remaining so. In the Northern area pastoralists remain highly stressed from long-term drought and recently inadequate rains. The food security outlook for Somalia is indicated in the regional map below.

Sudan Food Security Outlook: The food security situation during September to December 2004 is likely to be affected by the following climatic and non-climatic factors:

- The entire West Kordofan and part of the Eastern region as well as Eastern Equatoria will experience below normal rainfall, which will result in below normal crop performance. The rest of the areas are expected to experience average crop performance if the rains do not stop abruptly.
- Given the below normal rainfall performance in most parts of the upper catchments of the White and Blue Nile, there is a likelihood of reduced productivity even in the irrigated areas. This is because priority will be given to filling the dams for hydropower generation in the dry season.
- According to early FAO reports, there is a high chance of locust in Sudan and in parts of Sudan bordering Chad. This may lead to losses in crops especially sorghum. Locusts have been already reported in the neighboring countries.
- All of Western Sudan depends mainly on rainwater for storage during the dry season. The forecast indicate below normal conditions in most areas of Western Sudan. This may directly affect human and livestock.
- The prospect of peace in Southern Sudan has triggered movements of IDPs and refugees and this is expected to increase with the final peace agreement. This influx is also likely to significantly affect food security.

The outlook for Sudan is included in the regional map, figure 25.

Tanzania Food Security Outlook: The Shinyanga region is likely to continue experiencing lower crop production, especially paddy rice which depends on accumulated water from short rains (SOND), now forecasted to be below normal. The other Lake Victoria regions, Mwanza and Mara, may also experience a reduction in crop production, which could lead to food shortages in some localities. Livestock conditions are expected to be normal in terms of fodder and water availability in agropastoral and pastoral zones, except in the Shinyanga region where deteriorating conditions are expected. The remaining areas bimodal areas, viz. Tanga, Coast (Dwani), Kilimanjaro, Arusha and Manyara regions are expected to attain normal crop production to cater for

their requirements, despite the severe deficits experienced during the past season. The outlook is mapped in the regional figure below

Uganda Food Security Outlook: The food insecure situations in the Northern regions, as indicated in the map below, are expected to continue. This is due to forecasted poor rainfall in Karamoja, and the conflict in the north-central areas. In the rest of the country, the prediction for near normal to above normal rains should mitigate the current food insecure situations. This is mapped in the regional figure below.

Regional Food Security Outlook: The most likely scenarios for both agricultural and livestock sectors provide a basis for understanding the potential impact of the predicted climate conditions on the food security conditions in the region (Figure 28). The red shades indicate areas likely to be extremely food insecure, orange highly food insecure and yellow moderately food insecure. These categories were developed by factoring in mainly the climate component. However, it is worthwhile noting that the causes of food insecurity in GHA are complex and multiple. They could include civil strife, diseases, floods and chronic poverty. Therefore, the interpretation of the categories of food insecurity requires detailed information on the critical causes of food insecurity at the national and regional levels. For more information on food security conditions in countries refer to FEWS NET country reports at www.fews.net.

These conditions will worsen the already precarious food security crises among pastoralists in Eritrea, eastern Ethiopia and eastern and northern Kenya. Part of central Somalia is also likely to fall into extremely food-insecurity category causing negative consequences of more pastoralists becoming destitute on the periphery of urban centers. These scenarios have the potential of an ‘environmental explosion’ due to the over-exploitation of natural resources such as charcoal and firewood. The food security conditions should improve in the remaining countries of GHA, given a favorable rainfall performance.

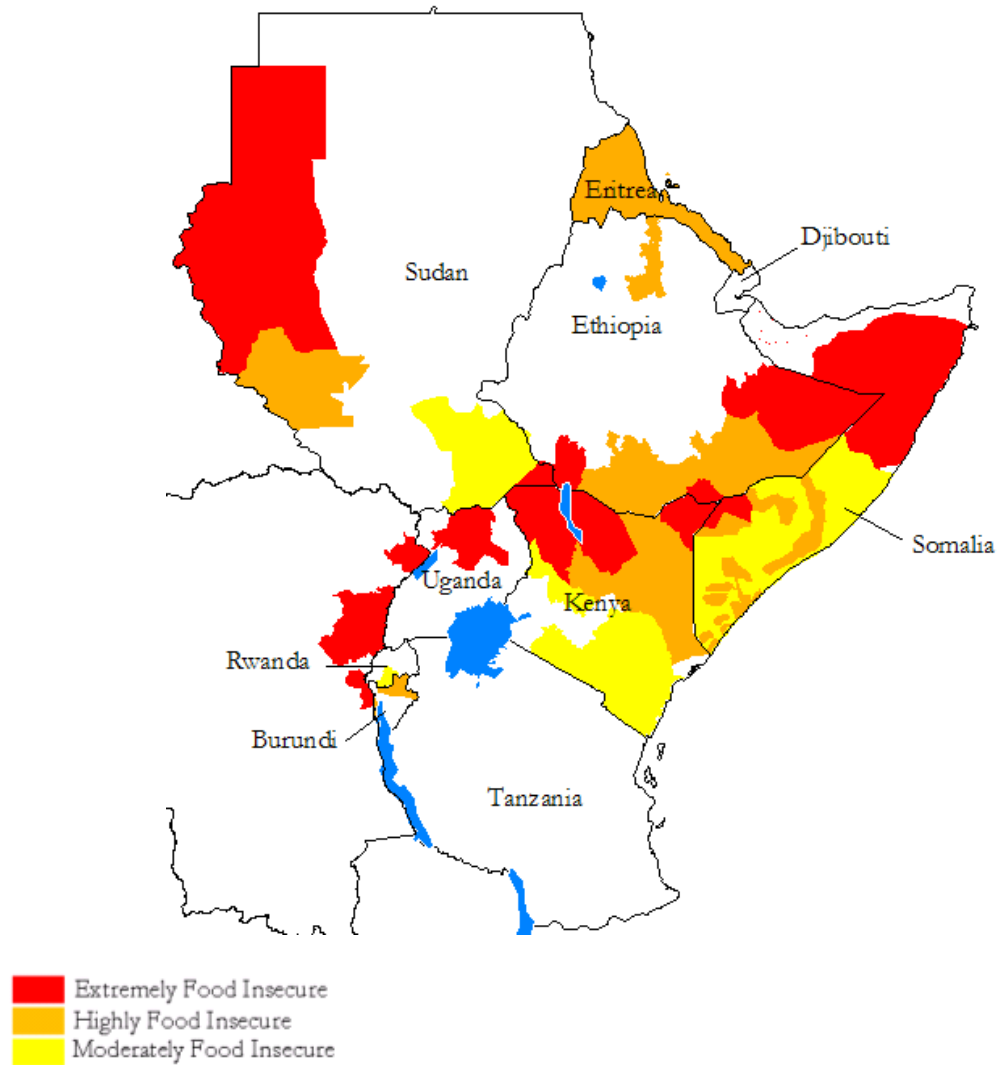


Figure 25. Regional Food Security Outlook map, GHA, end of December 2004.

Gaps and Recommendations

Following the intensive exercise of developing food security outlooks, the group of experts critically examined the gaps in the process. Although general information was provided about the likelihood of malaria outbreaks, in the future it would be desirable to incorporate a more systematic and geographically specific assessment of health-related risks as they affect food security. Very important factors, such as prices, imports, exports, grain reserves, etc. may be indirectly affected, or unaffected, by climate. Conflict is included in the analysis as a vulnerability factor but whether conflicts will intensify or abate over the forecast period is a matter of conjecture. Although very good baseline livelihood zonation has been undertaken in some areas, any model is incomplete and some coping measures may not be captured even with the best available data. The initiation of relief interventions would affect the trajectory of food security, causing it to deviate from what is projected in the climate-based food security outlook. Some of these factors may be able to be factored in more completely in coming years, while others are likely to remain intractable to prediction for the foreseeable future.

The group also discussed recommendations for future outlook fora. The most pressing need is for rigorous preparation and use of livelihood baselines in each country. The baselines and assessments of the current food security situation should be prepared by each country in advance, using a more-or-less common methodology. Information requested by FEWS NET for the regional analysis presented here should also be provided in advance.

These requirements suggest that the process of selecting participants should include the agencies and experts with responsibilities and expertise in these areas. Guidelines on data and analysis preparation should be circulated with one month advance notice. In addition, several days working together to prepare would assist participants in harmonizing the independently prepared analyses and data, and to integrate it into a regional synthesis of food security.

The food security outlook should be updated again at the end of the season (through March 2005), as more information about harvests and forage condition will be available at that time. Continual updating will help countries to advance contingency planning processes.

Further thought should be given as to how to differentiate areas where food insecurity is expected due to climatic factors versus those that are expected to persist for other reasons. For example, hotspots where food insecurity is governed primarily by non-climatic factors could be displayed with a hatch pattern. Other conventions and definitions should be developed and standardized, including adopting a common definition of food security/insecurity levels.

In the future it would be interesting to consider bringing existing information together in one Geographic Information System computer platform. This would allow other factors such as rates of HIV infection, for example, to be considered.

The emphasis of this first FSOF has been on development of methods. As confidence in the FSOs grows, greater attention will be needed to the linkages between the levels of food security risks identified – and the specific risk factors – and response mechanisms. Next steps include translation of the products into clear messages for assistance agencies and ultimately for food insecure populations themselves. Targeted information on the likely behavior of key climate-related variables affecting livelihoods in particular areas would allow affected households and communities to undertake risk management strategies to reduce climate-related losses. Working with both the media and decision makers so that they better understand how the FSOs are developed and interpreted will help the use of the information for better food security outcomes on the ground.

Appendix I: List of FSOF Participants, with affiliation

14TH CLIMATE OUTLOOK FORUM FOR THE GREATER HORN OF AFRICA (GHACOF14)

HILTON HOTEL – NAIROBI

23 – 27 AUGUST 2004

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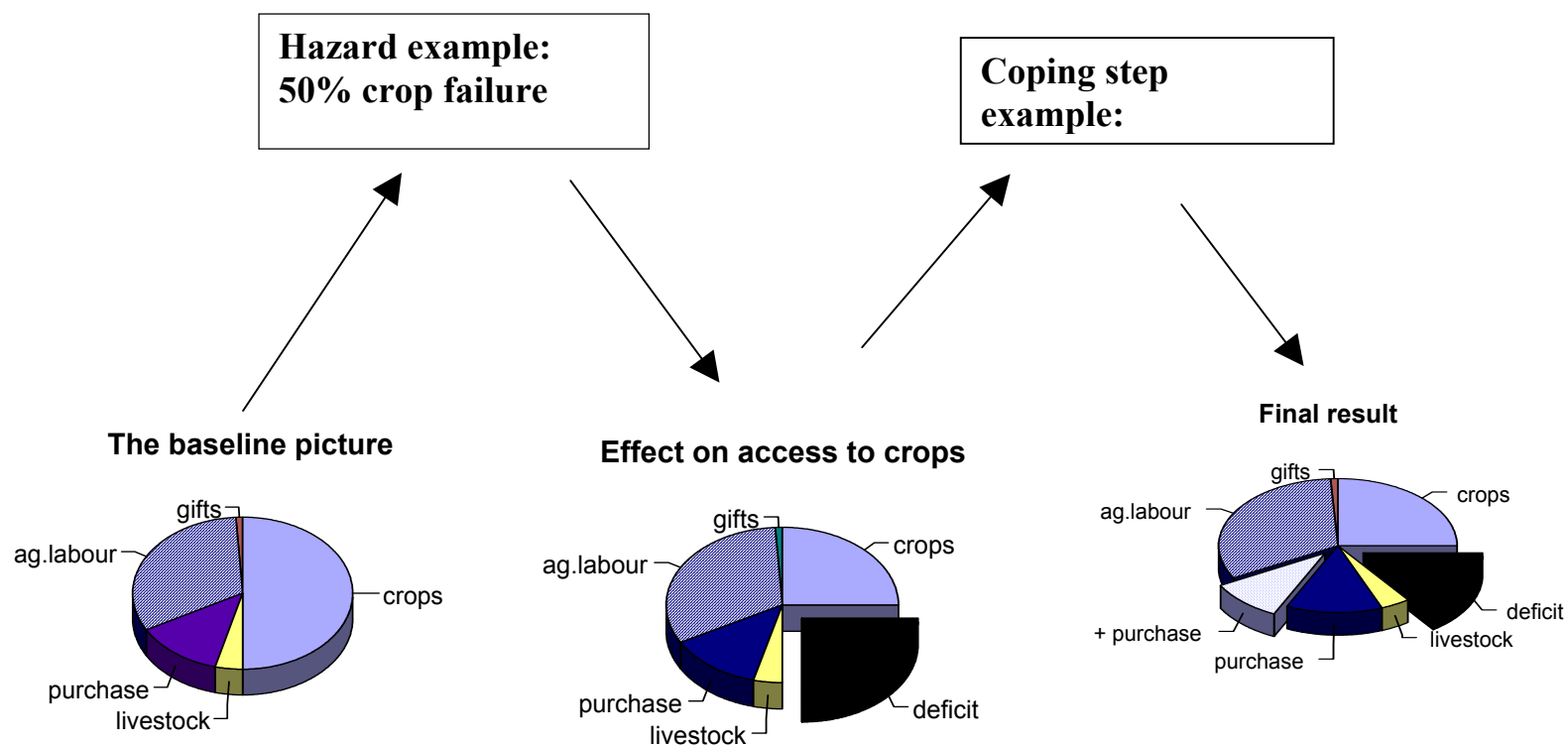
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Appendix 2. Example of hazard impact on household food security



$$\underline{\text{Outcome} = \text{Baseline} + \text{Hazard} + \text{Response}}$$